

BOOZ, ALLEN & HAMILTON Inc.

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To: Bob Burnett
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From: The IC Card Team

Subject: IC Card Update

The attached materials are intended to provide you with an update on the current status of the IC card project. Please review these materials prior to our team meeting in New York at 9:00 A.M. on September 3 (in the 20 West Conference Room). Any comments, questions, or suggestions prior to that meeting would be useful.

Our emerging conclusions:

- . Our assessment of the status of the economic case at the present time
 - MasterCard has pushed its analysis of the economic case for IC cards significantly further than Visa; as a result, a substantial portion of the structure of the economic case has been defined by MasterCard
 - The economic case for IC cards rests on the assumption that cost savings due to reduction of credit losses, fraud, counterfeit, authorization costs, and operations costs will outweigh the incremental costs associated with cards, terminals, operations, systems, and marketing
- . Recommended additions or enhancements to the economic models
 - In the interests of securing agreement, MasterCard has excluded a number of potential benefits from consideration within the economic case; we believe

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that the economic model should be enhanced to include a consideration of these benefits

- .. Increased credit loss reductions due to better scoring of customers and improved segmentation
- .. Increased card penetration
- .. Reduced operations expense through implementation of electronic data capture

- The model currently presumes that benefits will be realized in direct proportion to IC card penetration when, in fact, the pace of benefits realization will also reflect a variety of factors (e.g., geographic rollout); the model should be enhanced to include these factors

. Key areas of agreement and differences between MasterCard and Visa about projected IC card economics and business approaches

- MasterCard and Visa are in broad agreement concerning the likely benefits that will result from full implementation and penetration of the IC card
- These mutually perceived benefits include a 10% reduction of credit losses due to a reduction of overlimits, a 15% reduction of fraud losses due to elimination of reporting lags, and virtual elimination of all counterfeiting
- However, MasterCard and Visa disagree about key costs: terminal costs (and required terminal functionality) and IC card costs (both manufacturing volume/cost relationships and the costs of fully delivered cards)
- In addition, MasterCard and Visa strongly disagree about the likelihood of banks, customers, and merchants accepting IC cards and consequently about the feasibility of fully achieving anticipated benefits
 - .. MasterCard believes that member banks will be convinced by the economic case and that compliance with IC cards should be mandated (at least for acquirer banks)

- .. Visa believes that conversion will take place more slowly than MasterCard and that penetration will not be complete; without 100% penetration, many of the benefits will not be realized and the project cannot be justified economically
- Visa argues that member banks will not voluntarily convert to IC cards when they weigh the likely return against the risk, scale, and opportunity costs and that its philosophy dictates against mandating such a changeover
- Visa also argues that merchants will not willingly bear the additional cost of IC cards (primarily terminal costs) and that both merchants and customers will resist PIN use (note: PINs are optional in MasterCard's base case)
- Finally, Visa argues that cheaper solutions may be available (e.g., MCAS)

. Our proposed approach and workplan for Phase II

- We view Phase II as having four broad components:

.. Base Case Economics

- Verify costs for terminals, cards, and systems
- Verify benefits associated with reductions of fraud loss, credit loss, and authorization costs
- Quantify benefits not explicitly included in current MasterCard economic model (i.e., improved credit control, increased market penetration, and electronic data capture)
- Assess likely timing of and costs associated with conversion (need for dual systems, relationship between conversion schedule and pace of benefits realization)
- Determine maximum achievable penetration of

- cardholder and terminal base
- Determine economics of PIN optional versus PIN mandatory scenarios

.. IC Card Alternatives and Risks

- Using the economic model developed in Phase I, determine the economics associated with IC card alternatives (specifically MCAS and 100% online authorization)
- Assess the technical and operating risks associated with conversion from existing magnetic stripe cards to IC cards (adequacy of technology, manufacturing and personalization capacity)

.. Market Assessment

- Survey merchants and customers to determine attitudes regarding acceptance of IC cards (including utilization of PINs)
- Assess current competitive initiatives and competitive implications of imposing different point of sale procedures on the merchant and card user
- Determine member bank willingness to participate in IC card issuance and conversion (opportunity cost, mandatory vs. optional conversion)

.. Proposed Implementation Approach

- Determine opportunities for joint implementation of IC cards and identify specific areas for cooperation
- Assess potential legal and/or antitrust constraints

- Critical worksteps include:

.. Base Case Economics

- MC/Visa Internal interviews
- Vendor interviews
- Member bank interviews

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- Industry expert interviews
- Merchant survey
- Consumer survey
- Member bank database creation (focused on transaction information, loss information, and authorization)
- Financial modelling
- .. IC Card Alternatives and Risks
 - MC/Visa Internal interviews
 - Vendor interviews
 - Industry expert interviews
 - Secondary research (lit searches)
 - Financial modelling
- .. Market Assessment
 - MC/Visa Internal interviews
 - Competitor interviews
 - Member bank interviews
 - Merchant survey
 - Consumer survey
- .. Proposed Implementation Approach
 - MC/Visa Internal interviews
 - Financial modelling
- Likely timing and costs (to be determined)

Some additional items that we need to discuss at our September 3rd meeting:

. Project scope

- Is the scope of the project domestic or international? Visa believes that we should only be looking at IC benefits and costs domestically; the MasterCard model looks at benefits and costs on a worldwide basis
- Should we be looking at benefits not directly addressed in the model; specifically the possibility

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of increased card penetration (market expansion) due to IC cards and electronic data capture capabilities of IC card terminals?

. Presentation of Phase I results

- We need to agree upon how we will present Phase I results to our two clients -- timing, appropriate audiences, numbers of iterations, sequencing, etc.
- The timing of these presentations could have a significant budgetary impact; we will be running close to our Phase I budget of \$155,000 by Friday, September 11th; if we run through the following week (Friday, September 18th), we will overrun this amount by approximately \$22,000. Consequently, from a budget standpoint, it would make sense to try to schedule these presentations for September 10th and September 11th.

The remainder of this package consists of a detailed report outline, interview notes, and a very rough report draft (this will be revised substantially prior to the team meeting, but it gives you some notion of where we're going).

See you on Thursday!